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AUTHOR Aitken, Joan E.; Palmer, Rodger D.
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ABSTRACT

To analyze the effects of nonverbal environment factors--specifically of plants--on the perceived attitudes of a visitor to a business, a survey examined the use of plants to project warmth and caring on the part of the office occupant. Subjects, 170 students in a basic communication course, completed a survey regarding feelings and opinions generated by horticultural products. Results indicated that many people attach meaning to the use of horticultural products, resulting in a positive effect on the perceived attitudes that are projected by the use of live, healthy horticultural products in a business. (Twenty references are attached.) (SR)

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UNIVERSITY OF MISSOURI-KANSAS CITY

College of Arts & Sciences

Department of Communication Studies

5100 Rockhill Road
Kansas City, Missouri 64110-2499
Telephone (816) 276-1337

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The Use of Plants to Promote Warmth and Caring in a Business Environment

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Joan E. Aitken and Rodger D. Palmer

University of Missouri-Kansas City

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Author Identification: Joan E. Aitken is an Assistant Professor in the Department of Communication Studies. Rodger D. Palmer is a Senior Research Associate in the School of Pharmacy.

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ABSTRACT

This paper discusses the effects of nonverbal environment factors on the perceived attitudes of a visitor to a businness. The purpose of the paper is to analyze these effects with emphasis on the use of plants to project warmth and caring by the office occupant. A survey was given to 170 students in the basic communication course. Results indicate that many people attach specific meaning to the use of horticultural products, resulting in a positive effect on the perceived attitudes that are projected by the use of live, healthy horticultural products in a business.

For years social scientists have studied the environment's effects on human perceptions, attitudes, and behaviors (Miles & Leathers, 1984). One finding in the study of the environment was that the microenvironment of an office has an effect on the occupant, specifically, the occupant's productivity (Maslow & Mintz, 1956) and the visitor's perception of the occupant (Miles & Leathers, 1984).

Perceived credibility in the faculty office was studied by Miles and Leathers (1984). Because faculty members desire to be seen as credible by their students, Miles and Leathers sought to show that credibility can be effected by the type of objects displayed in a faculty office. Aesthetic and professionally-related objects were two classes of objects tested. Aesthetic objects consisted of landscape paintings, abstract paintings, potted plants, macrame wall hangings, and calendars. Professonally-related objects included a series of plaques and a professional library consisting or scholarly books and professional journals. Each class of objects (independent variable) was manipulated so that it was present in the office or it was not. Photographs were taken of the office with and without each class of objects. A group of 245 students were asked to view the photographs for one and one-half minutes and then each student was asked to rate each of three dimensions

of credibility. These dimensions; authoritativeness, trustworthiness, and dynamism were determined by factor analyzing 18 scales. These scales loaded on the three factors beyond the .60 criterion level thus, validating the three dimensions for this test. Their results showed that authoritativeness was effected significantly only by professionally-related objects, while trustworthiness was effected significantly by both aesthetic and professionally-related objects. Dynamism was not scientifically effected by either aesthetic or professionally-related objects. Therefore Miles and Leathers was able to prove empirically that aesthetic and professionally-related objects do have an effect on the perceived credibility of a faculty office.

The construct that nonverbal behaviors can effect the way someone perceives another person has been well established (Mehrabian, 1969). However, the idea that nonverbal environmental factors can influence perceived attitudes about others has not been totally accepted by all communication theorist. With Burgoon's findings (1985) that aesthetic objects, and Knapp findings (1980, p. 10) that furniture are nonverbal environmental factors the assumption by many theorist is that indeed the environment does provide a basis for nonverbal communication. Furniture arrangement, professionally-related objects, and aesthetic objects can be added to the list of nonverbal environmental factors and

they all can help provide positive environments in offices. Because the positive effects of increased productivity and perceptions of warmth and caring by visitors to an office are important to business and academic institutions, environmental influences have served as a significant area of study. Large corporations such as Kodak and McDonald's have spent millions of dollars for consultants and reconstruction of office areas to provide office environments that reduce barriers to communication and increase the flow of communication (Schmidt & Dorsey, 1986). According to Schmidt and Dorsey these "open landscaped" offices provide increased productivity because "office design, organizational productivity, and communication behavior are intimately related" (p. 4).

An "open landscaped" office has no individual offices. Each division of the office is arranged in one area with file cabinets, moveable screens, and large plants used to separate individual work sites. These moveable screens and plants are also used to absorb noise that would otherwise be contained if the conventional office (with doors) was used (American School and University, 1972; Schmidt & Dorsey, 1986). The management personnel are also located in the open office area. This open office arrangement provides the employees and management greater access to each other thus providing an increased flow of interpersonal communication and ideas (Schmidt & Dorsey, 1986).

Burgoon, Buller, Hale, and deTurck (1984) stated, "nonverbal behavior in interpersonal settings provide a framework for interpreting communication exchanges... (p. 351)." Thus, by providing a warm and caring environment, an office can project an atmosphere of intimacy that will provide a framework to enhance communication. This relationship between office occupant and visitor or teacher and student provides for more effective interpersonal communication and learning (Kleinfeld, 1974; McCroskey & McCain, 1974). Seibold, Cantrill, & Meyers (1985) contended that interpersonal communication is symbolic interaction that creates meaning for ideas thus, enabling a person to better communicate his or her ideas to others. Symbols can also be used to persuade others and regulate behavior (Cummings, Long, & Lewis, 1983, p. 208). Therefore, as symbols of positive attitudes, nonverbal environmental factors in the office may increase productivity in offices and provide a better atmosphere for discussions. However, these positive attitudes may only be projected if the occupant of an office consciously provides the nonverbal factors necessary for a positive office atmosphere.

The purpose of this study is to analyze the effects of various office contents on nonverbal communication, with specific emphasis on the effect of plants and floral artifacts on the perception of warmth and caring by the office visitor. The following paragraphs contain a review

of literature and a discussion about how the literature may lead to further research.

Nonverbal Environmental Factors of an Office

Research on three nonverbal environmental factors are related to the potential effects that plants may have on the office environment. Those three factors--furniture, professionally related objects, and aesthetic objects--will be explained in detail in the following section.

Furniture. Preston and Quesada's (1974) poll of various companies found that the type and size of office furniture have an effect on the office environment. Large desks project a nonverbal image of power and importance and therefore, a top executive who recognizes the symbol of a large desk will use one in his or her office. A sofa in an office provides an atmosphere for more interaction between the occupant and visitor. In some cases, a person may use no desk, but instead use only a small table for doing the necessary paper work. Generally, this arrangement is used in an outer office situation for more informal meetings, while the inner office (with desk) is reserved for formal meetings in which the occupant wants to project a feeling of control over the meeting (pp. 29-34). A more narrow desk allows for more intimate interaction between occupant and visitor. This narrower desk (less than three feet wide) does not present a barrier between occupant and visitor (Sommer, 1959). A narrow desk is important when successful

interpersonal communication between the occupant of the office and visitor is necessary for the desired completion of the task at hand (Preston & Quesada, 1974).

Furniture and its arrangement have been found to have various effects, both positive and negative, on the office environment (Widgery & Stackpole, 1972). Preston and Quesada (1974) discovered that better interpersonal communication took place when no desk is placed between occupant and visitor because no desk allowed almost unlimited seating patterns and interpersonal distances. This allowed the office occupant and visitor the freedom to arrive at the optimum proximics for positive interpersonal communication. Various positions of the desk were studied. When the desk was placed in a corner of the office the occupant projected authority and aloofness. When the desk was placed next to a wall, this placement allowed the visitor to approach the occupant more closely so that their interaction became more intimate and friendly (Campbell, 1979; Preston & Quesada, 1974). On the other hand, a more flexible approach was to use no desk at all. Psychological counsellors, for example, use this approach to produce a less structured atmosphere for easier communication between counsellor and client. Arrangement of chairs in the office plays a role in the nonverbal messages projected by the office's occupant. If the occupant placed a chair in front of the desk, the arrangement projected feelings of power and

aloofness. If the occupant placed a chair to the side or next to the occupant's chair behind the desk, the arrangement projected the feelings of openness and cooperation (Preston & Quesada, 1974). Sommer (1959) found, however, that people tend to communicate more when their chairs are separated by a short distance. This increased communication should lead to more productive interchanges of ideas. Thus, as Burgoon (1978) stated, "[a] violation of personal space expectation can influence communication outcomes" (p. 141) and possibly have a detrimental effect on an office's ability to produce the desired flow of ideas.

Professionally related objects. Professionally related objects--such as diplomas, awards, licenses, and certificates--provide a feeling of credibility and expertise (Siegel, 1980). Because these professionally-related objects suggest that the occupant of an office is more competent, the visitor perceives the occupant as more credible and trustworthy. Miles and Leathers (1984) stated that even the level of perceived credibility and expertise may vary according to the school or organization from which the diplomas and certificates were received. Those from more prestigious schools and/or with honors projected a higher level of competence which in turn lead to more initial trust of the office occupant.

Aesthetic objects. Thayer and Atwood (cited in Campbell 1979) found that plants in a landscape environment

produced a feeling of pleasure. Apparently, however, little research has been done to show their effect on the office microenvironment. Campbell (1979) found that live plants and other living things (fish) in an office make the visitor feel more comfortable and welcome. His study showed that plants and posters had a greater positive influence on perceived welcomeness and comfort than did desk placement or tidiness (p. 651).

Some large companies have purchased works of art to be placed in individual office. These works of art have been found to stimulate creativity and pride (Schmidt & Dorsey, 1986). Campbell (1979) found that art work, such as posters and macrame hangings, interacted with plants to produce a feeling of comfort in an office. His study also found that a tidy office produced an even higher degree of perceived comfort and welcomeness by the office visitor. To determine these interactions Campbell showed slides of offices containing or not containing various combinations of items and/or their arrangement. These items; living things, art objects, tidiness, and arrangement of desk were shown to 250 students who rated the offices. The offices were rated on a 9-point bipolar scale as comfortable, inviting, welcoming, projecting a similarity of visitor and occupant, and how busy and rushed the occupant was perceived. Campbell used a repeated-measures analysis of variance to determine the significance of each factor in his study.

Miles and Leathers (1984) found that both plants and art work increased perceived trustworthiness of an office's occupant. These findings support Campbell's study, by showing that plants can provide nonverbal messages about an people in a business environment. In some companies the number of potted plants in an office is an indicator of the occupant's status in that company (Sachs, 1975). Thus, the potential exists for plants and floral artifacts (dried flowers, wreaths, and pictures of plants) to influence the office environment.

Horticultural Survey

Method. A class of students in a basic communication course were asked to write an essay on the use of horticultural products in communication. The nature of the essays included comments about live plants, artificial plants and flowers, flowering plants, cut flowers, floral arrangements, and landscaping. Students discussed use of plants in the home, in business environments, and in gift-giving. Most students attached specific meanings for various horticultural products. From those essays, 190 statements were selected that represented a cross-section of comments about feelings and opinions generated by horticultural products. A questionnaire was constructed using the statements on a strongly agree (like me) to strongly disagree (unlike me) scale. The questionnaire was administered to 170 students in a basic communication course. From the 190 items, the specific results of 35 statements are reported here because of their relevance to discussion of horticultural products in a business environment.

Results. The survey indicated that the majority of students attached meaning to horticultural products. A difference between male and female respondents was found on certain statements. The results by item--indicating percentage of respondents who selected each scale number--follows.

Results of Survey: Communication Through Plants

Female and Male Responses: Percentages on Each Item

Scale 1=Strongly Agree (like me) to 5=Strongly Disagree (unlike me)

1. All flowers converge to one meaning: caring.

Females: 1:22% 2:32% 3:12% 4:22% 5:11% Mean:2.68

Males: 1:18% 2:30% 3:13% 4:30% 5:10% Mean:2.83

2. Green plants in an office make it more personal.

Females: 1:54% 2:40% 3:05% 4:2% 5:0% Mean:1.56

Males: 1:30% 2:54% 3:11% 4:4% 5:1% Mean:1.94

3. A business without plants seems like it doesn't care about its people.

Females: 1:10% 2:23% 3:37% 4:19% 5:10% Mean:2.96

Males: 1:04% 2:23% 3:31% 4:37% 5:06% Mean:3.17

4. Plants make me feel relaxed.

Females: 1:25% 2:37% 3:31% 4:3% 5:3% Mean:2.21

Males: 1:07% 2:57% 3:34% 4:1% 5:0% Mean:2.30

5. Anywhere you place a plant, it give a new reflection of the outside world.

Females: 1:17% 2:44% 3:29% 4:7% 5:2% Mean:2.32

Males: 1:11% 2:38% 3:42% 4:7% 5:1% Mean:2.49

6. Plants give people a sense of femininity.

Females: 1:0% 2:03% 3:26% 4:58% 5:13% Mean:3.81

Males: 1:0% 2:10% 3:27% 4:53% 5:10% Mean:3.63

7. An office with plants has cleaner air and is healthier.

Females: 1:17% 2:47% 3:25% 4:08% 5:2% Mean:2.3

Males: 1:14% 2:45% 3:27% 4:11% 5:3% Mean:2.44

8. Flowers drive away dreariness.

Females: 1:42% 2:46% 3:10% 4:1% 5:0% Mean:1.70

Males: 1:10% 2:54% 3:25% 4:8% 5:3% Mean:2.41

9. A well manicured lawn and landscaping promote a very professional image.

Females: 1:50% 2:44% 3:3% 4:1% 5:2% Mean:1.62

Males: 1:41% 2:50% 3:7% 4:3% 5:0% Mean:1.72

10. An office neatly decorated with live plants gives me the impression of a well-organized and well-staffed institution.

Females: 1:30% 2:46% 3:13% 4:8% 5:2% Mean:2.05

Males: 1:28% 2:44% 3:23% 4:4% 5:1% Mean:2:07

11. Healthy plants in a office affect my attitude toward the person(s) who work there.

Females: 1:11% 2:45% 3:37% 4:05% 5:1% Mean:2.39

Males: 1:06% 2:41% 3:39% 4:14% 5:0% Mean:2.62

12. Cactuses remind me of prickly personalities.

Females: 1:4% 2:18% 3:29% 4:31% 5:17% Mean:3.39

Males: 1:1% 2:15% 3:31% 4:42% 5:10% Mean:3.44

13. When I walk into an office with plants, it reminds me of a jungle not an office.

Females: 1:1% 2:1% 3:13% 4:52% 5:33% Mean:4.15

Males: 1:1% 2:7% 3:14% 4:59% 5:18% Mean:3.86

14. Plants that are set on the floor relate to me that the person who owns them is a stable person.

Females: 1:0% 2:9% 3:58% 4:20% 5:13% Mean:3.37

Males: 1:0% 2:6% 3:53% 4:35% 5:06% Mean:3.41

15. People who set plants on things, such as cabinets, are ordinary people.

Females: 1:0% 2:11% 3:53% 4:18% 5:18% Mean:3.43

Males: 1:1% 2:14% 3:58% 4:15% 5:11% Mean:3.21

16. Sometimes when I see a plant it brings back fond memories of my childhood.

Females: 1:12% 2:33% 3:26% 4:21% 5:07% Mean:2.78

Males: 1:04% 2:28% 3:25% 4:31% 5:11% Mean:3.17

17. The idea that a person has to have plastic plants shows me a fake person. They are lazy and uncaring.

Females: 1:8% 2:27% 3:22% 4:30% 5:12% Mean:3.11

Males: 1:4% 2:30% 3:24% 4:32% 5:10% Mean:3.14

18. I hate going into a room and seeing a dying plant or flower.

Females: 1:30% 2:44% 3:18% 4:07% 5:0% Mean:2.02

Males: 1:13% 2:48% 3:28% 4:10% 5:1% Mean:2.39

19. Plant arrangements mean the person is creative.

Females: 1:23% 2:56% 3:14% 4:4% 5:2% Mean:2.05

Males: 1:11% 2:56% 3:23% 4:8% 5:1% Mean:2.32

20. Good landscaping of a business makes a first impression that is valuable.

Females: 1:45% 2:46% 3:4% 4:4% 5:0% Mean:1.67

Males: 1:35% 2:56% 3:6% 4:3% 5:0% Mean:1.76

21. The kind of plants someone has reflects the nature of his or her personality.

Females: 1:12% 2:48% 3:27% 4:08% 5:4% Mean:2.43

Males: 1:04% 2:50% 3:34% 4:10% 5:1% Mean:2.54

22. If there is nothing around a building but eroding soil, the impression is that if they don't care enough to take care of this problem, how will they take care of their customers?

Females: 1:27% 2:55% 3:12% 4:4% 5:2% Mean:1.99

Males: 1:17% 2:59% 3:13% 4:7% 5:4% Mean:2.23

23. The land around a business is an important advertising medium.

Females: 1:32% 2:57% 3:10% 4:1% 5:0% Mean:1.8

Males: 1:21% 2:69% 3:08% 4:1% 5:0% Mean:1.9

24. When I see plants in stores, I believe the store is trying to make the buyer feel relaxed and at home so he or she will buy more.

Females: 1:11% 2:34% 3:42% 4:10% 5:2% Mean:2.58

Males: 1:06% 2:51% 3:34% 4:10% 5:0% Mean:2.48

25. Plastic plants make me feel the store is just a huge uncaring place.

Females: 1:8% 2:21% 3:34% 4:26% 5:10% Mean:3.09

Males: 1:7% 2:20% 3:35% 4:34% 5:04% Mean:3.08

26. A green plant symbolizes life and health, especially if it is a big plant.

Females: 1:27% 2:52% 3:14% 4:6% 5:1% Mean:2.02

Males: 1:18% 2:51% 3:28% 4:1% 5:1% Mean:2.17

27. Green plants add warmth and color to a place.

Females: 1:36% 2:57% 3:06% 4:1% 5:0% Mean:1.72

Males: 1:20% 2:61% 3:19% 4:0% 5:0% Mean:1.99

28. I think silk flower arrangements are lovely for centerpieces in the home or office.

Females: 1:28% 2:49% 3:19% 4:02% 5:1% Mean:1.98

Males: 1:08% 2:46% 3:32% 4:10% 5:3% Mean:2.52

29. When I walk into an office and see a large, healthy green plant, I develop a positive image at once.

Females: 1:18% 2:48% 3:27% 4:4% 5:2% Mean:2.23

Males: 1:07% 2:44% 3:41% 4:7% 5:1% Mean:2.52

30. If I see a plant turning brown and dying, I think I expect the office to be kind of shabby.

Females: 1:11% 2:53% 3:28% 4:07% 5:2% Mean:2.37

Males: 1:06% 2:37% 3:40% 4:15% 5:3% Mean:2.73

31. A company with artificial plants is a company that looks for production, practicality, and the easy way

around things. They probably would be the type to dump toxic wastes.

Females: 1:10% 2:19% 3:40% 4:23% 5:7% Mean:2.98

Males: 1:11% 2:24% 3:32% 4:25% 5:7% Mean:2.93

32. Plants induce relaxation from the tension that such highly populated areas create, like at a business center and shopping mall.

Females: 1:23% 2:58% 3:16% 4:3% 5:0% Mean:1.99

Males: 1:15% 2:62% 3:20% 4:3% 5:0% Mean:2.10

33. Too many plants in an office or home can leave a bad impression because I think this person is too wrapped up in these plants.

Females: 1:04% 2:32% 3:28% 4:25% 5:10% Mean:3.05

Males: 1:07% 2:48% 3:13% 4:23% 5:10% Mean:2.80

34. A plant in an office is usually a sign of a person who is well-rounded.

Females: 1:11% 2:33% 3:47% 4:5% 5:3% Mean:2.56

Males: 1:03% 2:37% 3:53% 4:6% 5:3% Mean:2.69

35. I don't believe I've ever had any impressions of the communication of plants.

Females: 1:3% 2:11% 3:14% 4:38% 5:33% Mean:3.88

Males: 1:8% 2:17% 3:23% 4:35% 5:17% Mean:3.35

Discussion

The specific nonverbal messages sent by the contents of an office give the visitor a preconceived idea of the office occupant. The visitor may use these preconceived ideas to

determine how he or she will interact with the occupant of that office. If positive impressions are formed, the chances for improved interaction may develop. If negative impressions are perceived, however, the chances for productive interpersonal communication may be inhibited. These perceived nonverbal messages from the environment--credibility, expertise, openness, power, importance, trustworthiness, warmth, caring, and comfort--have a direct effect on the communication process in an office. All of such nonverbal messages, with the possible exception of power, could provide a positive environment for improved interpersonal interaction in an office.

Effective business operations depend upon a steady flow of communication between management and the people producing the company's product, whether the product is in the area of goods or services. Because increased interpersonal communication is enhanced by positive nonverbal environmental factors in the office, appropriate horticultural products may increase the flow of ideas, proposals, or even solutions between employees. Positive environmental factors could facilitate the process of creating good morale, greater profits, and a sound company. By using the environment to increase the potential for a communication flow, one could theoretically increase the chances for greater productivity from that office. If

research might find that organizations can increase productivity through the careful selection of office horticultural products, such investigation seems warranted. Due to the potential effects of projecting a warm and caring environment indicated by this study, further study of the effects of live plants and floral artifacts is indicated.

The plants and flowers inside and outside a business give indicators to a business' image. Because the person who keeps attractive plants must give attention to those plants--or see that someone else provides care for the plants--the visitor may perceive that such an individual is caring and patient. When an office visitor sees a cut flower arrangement, he or she may perceive a person who loves beauty, a person who is enjoying a special celebration, or a person who has the finances to spend money on something perishable. Cut flowers for other than personal gifts were not studied sufficiently to draw conclusions for the business environment.

Although artificial plants and silk flowers are accepted by many people, they are negatively interpreted by a sufficient number of people that we recommend avoiding their use. Although some people attach negative associations with artificial plants and flowers, most attach positive associations to healthy, living horticultural products. Even though a person may think that plants are used to manipulate the business situation, he or she will

probably still maintain a positive attitude toward the person using plants. This study indicates that a few, large, healthy green plants appear to be worth having inside a business environment. The subjects perceived that plants provide a cleaner and healthier atmosphere. The majority of both men and women thought of plants as giving an impression of warmth. Plants add balance to busy areas. Effective use of plants may give the impression of a well-run organization. The exact location of plants seems to have little influence other than they should be neat. Men seemed more concerned than women that there not be too many plants. Because dying plants or flowers are negatively interpreted, they should be disposed of or replaced promptly if plants or flowers are not in top condition.

The results of this study suggest that nonverbal messages from landscaping outside a business may be even more important than the use of plants indoors. A well manicured lawn and landscaping, for example, promote a professional image and are important to a business' first impression.

This study found that for some people, horticultural products can affect the way an office occupant or a business is perceived. Previous studies indicate that furniture, furniture arrangement, professionally related objects, and aesthetic objects play an important role on the interpersonal communication process between an office

occupant and visitor. So too, horticultural products can affect one's feelings of being welcome and comfortable. Horticultural products apparently do provide a message of warmth and caring.

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